

**ADDENDUM NO. 3**

**PROJECT NAME:** Devaney Sports Center New Siding  
**UNL PROJECT NUMBER:** C100P100  
**INVITATION NUMBER:** 2077-13-7215

**CONSULTANT:** The Clark Enersen Partners  
1010 Lincoln Mall, Suite 200  
Lincoln, NE 68508

**DATE OF ISSUANCE:** March 20, 2013

**DATE OF BID OPENING:** March 26, 2013

The bid documents dated **February 22, 2013** for the above referenced project are amended by this addendum.

NOTICE: This Addendum is issued to all interested prospective bidders as an amendment to the project manual or other parts of the bidding (contract) documents for the above named project. Reference to this Addendum must be included in the Bid proposal. The information contained herein shall be fully incorporated into the contract documents as though originally included therein.

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**GENERAL**

**Item 3-1: Section 00 41 13 Bid Proposal Form**

Bid Proposal Form has been modified to include Alternate A-2 and is attached.

**Item 3-2: Section 01 23 00 - Alternates**

Delete the existing Section 012300 - Alternates and insert the attached Section 012300 - Alternates in its place.

**ARCHITECTURAL**

**Specifications**

**Item 3-3: Section 07 27 26 – Fluid- Applied Membrane Air Barriers**

- A. Refer to section 3.3, B, modify the note, all vertical joints shall be sealed (larger and smaller than ¼" in width)
- B. Refer to section 3.5, B, 1, minimum dry film thickness shall be 25 mil in lieu of 45 mil noted. Minimum mil thickness supersedes manufacturer recommendations.

**Item 3-4: Section 07 27 27 – Vapor Permeable Air Barriers**

Under Alternate A-2, add this section in its entirety.

## Drawings

### Item 3-5: **Sheet A2.0 Exterior Elevation Orientation Plan**

Refer to Under Base Bid and Under Alternate A-1 Notes on the plan. We offer the following clarifications.

- A. The leader lines extending to Under Base Bid to the extend lines for elevations 5/A2.1 and 8/A2.1 should extend to Under Alternate A-1.
- B. Under Base Bid, as noted the base bid is to provide full coverage over the entire existing panel surface, including treating the vertical and horizontal joints as noted in specification section 07 27 26, 3.3, B and detail 1/A8.1.
- C. Under Alternate A-1, as noted the full coverage shall be removed on the metal panel surface, not the vertical and horizontal joint, on elevations 5/A2.1 and 8/A2.1.
- D. Under Alternate A-2, the self-adhered breathable sheet membrane air barrier system shall provide full coverage over the existing panel surface, including treating the vertical and horizontal joints.

### Item 3-6: **Sheet A4.1 Wall Sections, Structural Details, Aluminum Door & Frame Types, Door Schedule.**

- A. Refer to Hollow Metal Frame Types, change verbiage to Aluminum Frames Types.
- B. Refer to ALF-1 and ALF-2, these frames are to be 2" x 4 1/2" storefront framing not 2" x 6" curtain wall framing. Frames are to be thermally-broken as noted.

**B I D P R O P O S A L**

**TO:** THE BOARD OF REGENTS OF THE UNIVERSITY OF NEBRASKA  
c/o University of Nebraska-Lincoln  
Business Services  
Procurement Services Dept.  
1700 Y Street  
Lincoln, NE 68588-0645

**BID PROPOSAL FOR:** Prime General Construction

**PROJECT:** C100P100, DEVANEY SPORTS CENTER NEW SIDING – PHASE 1

**INVITATION NO.:** 2077-13-7215

**COMPLETE THE FOLLOWING INFORMATION – BIDDERS NAME AND TYPE OF BUSINESS:**

This Bid is offered by \_\_\_\_\_, hereinafter referred to as the Bidder,

- a corporation organized and existing under the laws of the State of \_\_\_\_\_.
- a limited liability company organized and existing under the laws of the State of \_\_\_\_\_.
- a partnership doing business as \_\_\_\_\_.
- an individual doing business as \_\_\_\_\_.

In response to the Bidding Requirements for the construction of the project identified above by name, invitation number, and project number, the Bidder hereby makes the following representations:

Bidder has received the drawings and specifications for the project prepared by: The Clark Enersen Partners, Inc.

Bidder has examined the Bidding Documents, visited the site, and otherwise familiarized itself with the local conditions affecting the construction of the project.

**COMPLETE THE FOLLOWING INFORMATION – BASE BID:**

Bidder agrees to furnish all labor, materials, tools, equipment, services, transportation, and supervision required to complete the work indicated in the Bidding Documents within the time set forth herein for the lump sum Base Bid amount of

\_\_\_\_\_ dollars (\$\_\_\_\_\_).

**COMPLETE THE FOLLOWING INFORMATION – ALTERNATE PROPOSALS:**

The Base Bid amount given above may be increased or decreased by the acceptance of any of the Alternate Proposals listed below. The full and complete description of the work to be added to or deleted from the scope of the project by each of the Alternate Proposals is that found in Division 01, Section 01 23 00 - Alternates.

ALTERNATE NO. 1: Provide coverage of fluid applied membrane air barrier at existing panel joints only on elevations 5/A2.1 and 87/A2.1 (extents indicated on sheet A2.0). Provide full coverage on entire panels and joints on all other locations.

DEDUCT the sum of \_\_\_\_\_ dollars (\$\_\_\_\_\_)

ALTERNATE NO. 2: Provide total coverage of existing panel and seams using Wrapshield SA in lieu of the fluid applied membrane called out in the base bid.

ADD / DEDUCT (circle one) the sum of \_\_\_\_\_ dollars (\$\_\_\_\_\_)

**PROVIDE THE FOLLOWING INFORMATION – BID SECURITY:**

Included with this Proposal is Bid Security of the type and in the amount required by the Bidding Instructions.

**COMPLETE THE FOLLOWING INFORMATION – NUMBER OF ADDENDA RECEIVED:**

Bidder has received Addenda Nos. \_\_\_\_\_, and has included their provisions in this Bid.

**COMPLY WITH THE FOLLOWING INFORMATION:**

In submitting this Bid, Bidder agrees to the following:

1. To hold this Bid open for 60 days following the bid date.
2. To enter into and execute the "University of Nebraska Standard Form Construction Agreement" based upon this Bid, if accepted by Owner.
3. To perform all work required by the Contract Documents, but **must be substantially complete by August 17, 2013.**
4. That this Bid has been arrived at without collusion with other Bidders and without any effort or activity which might prevent the University of Nebraska from receiving the lowest possible competitive Bid.
5. To comply with Nebraska Fair Employment Practice Act, understanding that a breach of this provision will be regarded as a material breach of contract.
6. To review and comply with University of Nebraska-Lincoln Standard Terms of Purchase. View at <http://www.nebraska.edu/administration/business-and-finance/purchasing/terms-of-purchase.html>.
7. To comply with all other applicable policies, procedures and requirements of the Board of Regents of the University of Nebraska with respect to this Bid, the Project, the bid invitation and/or the bidding process.

**COMPLETE THE FOLLOWING INFORMATION – SIGNATURE AND CONTACT INFORMATION:**

Address:

Signature:

\_\_\_\_\_

\_\_\_\_\_

Printed Name:

\_\_\_\_\_

\_\_\_\_\_

Tele. No.:

Title:

\_\_\_\_\_

\_\_\_\_\_

Fax. No.:

Dated this

day of

, 20

\_\_\_\_\_

\_\_\_\_\_

Email Address:

\_\_\_\_\_

## SECTION 01 23 00 - ALTERNATES

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of Contract, including General Conditions and other Division-01 Specifications Sections, apply to this Section.

#### 1.2 SUMMARY

- A. This Section specifies administrative and procedural requirements for Alternates.
- B. Definition: An Alternate is an amount proposed by Bidders and stated on the Bid Form for certain construction activities defined in the Bidding Requirements that may be added to or deducted from Base Bid amount if the Owner decides to accept a corresponding change in either the amount of construction to be completed, or in the products, materials, equipment, systems or installation methods described in Contract Documents.
- C. Coordination: Coordinate related Work and modify or adjust adjacent Work as necessary to ensure that Work affected by each accepted Alternate is complete and fully integrated in the project.
- D. Notification: Immediately following the award of the Contract, prepare and distribute to each party involved, notification of the status of each Alternate. Indicate whether Alternates have been accepted, rejected or deferred for consideration at a later date. Include a complete description of modifications to Alternates.
- E. Schedule: A Schedule of Alternates is included at the end of the Section. Specification Sections referenced in the schedule contain requirements for materials and methods necessary to achieve the work described under each Alternate.
  1. Include as part of each Alternate, miscellaneous devices, accessory objects and similar items incidental to or required for a complete installation whether or not mentioned as part of the Alternate.

### PART 2 - PRODUCTS (Not Applicable)

### PART 3 - EXECUTION

#### 3.1 SCHEDULE OF ALTERNATES

ALTERNATE NO. 1 : Provide full coverage of fluid applied membrane air barrier at existing panel joints only on elevations 5/A2.1 and 8/A2.1 (extents indicated on sheet A2.0). This alternate only changes the application on the panels shown on elevations 5/A2.1 and 8/A2.1. All other panels located behind the new siding shall have full coverage as required in the BASE BID and application of fluid applied membrane to those panels are not changed.

ALTERNATE NO. 2 : Alternate A-2: Provide an alternate cost to provide a self-adhered breathable sheet membrane air barrier system (equal to Vapro Shield WrapShield SA refer to specification section 07 27 27 Vapor Permeable Air Barriers) in lieu of fluid-applied membrane air barrier required in the BASE BID. The self-adhered breathable sheet membrane air barrier system shall provide full coverage over all existing panel surfaces covered in this Phase 1 of the DEVANEY SPORTS CENTER project, including treating the vertical and horizontal joints. This Alternate No. 2 is a change in the BASE BID and is **not** associated with Alternate No. 1.

**SECTION 01 23 00 - ALTERNATES**

**END OF SECTION**

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TCEP Project No.: 018-179-11

## **SECTION 072727 – VAPOR PERMEABLE AIR BARRIER**

### **1. GENERAL**

#### **1.1 GENERAL REQUIREMENTS**

- A. This Specification shall be read as a whole by all parties concerned. Each Section may contain more or less the complete Work of any trade. The Contractor is solely responsible to make clear to the Subcontractors the extent of their Work and coordinate overlapping Work.

#### **1.2 SYSTEM DESCRIPTION**

- A. Supply labor, materials and equipment for a fully adhered water-resistive vapor permeable air barrier membrane system.
- B. Complete Work as shown on the Drawings and specified herein to bridge gaps and seal the water-resistive vapor permeable air barrier membrane against air leakage and water intrusion.
  - 1. Connections of the walls to the roof membrane
  - 2. Connections of the walls to the foundations
  - 3. Openings and penetrations of window and door frames, store front, curtain wall
  - 4. Piping, conduit, duct and similar penetrations
  - 5. All other air leakage pathways in the building envelope

- C. Install primary water-resistive vapor permeable air barrier, flashing, lap seam tapes, sill pan and ventilation strip accessories.

#### **1.3 RELATED REQUIREMENTS:**

- A. Section 074213 – Metal Wall Panels.
- B. Section 074243 – Aluminum Composite Panels.

#### **1.4 REFERENCE STANDARDS**

- A. American Association of Textile Chemists and Colorists (AATCC): ATCC 127 - Test Method for Water Resistance: Hydrostatic Pressure Test.
- B. ASTM International (ASTM):
  - 1. ASTM D 882 - Test Method for Tensile Properties of Thin Plastic Sheeting.
  - 2. ASTM E 84 - Test Method for Surface Burning Characteristics of Building Materials.
  - 3. ASTM E 96/E 96M - Test Methods for Water Vapor Transmission of Materials.

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4. ASTM E 283 - Standard Test Method for Determining Rate of Air Leakage Through Exterior Windows, Curtain Walls, and Doors Under Specified Pressure Differences Across the Specimen.
  5. ASTM E 2178 - Standard Test Method for Air Permeance of Building Materials.
  6. ASTM E 2357 - Standard Test Method for Determining Air Leakage of Air Barrier Assemblies.
- C. International Code Council Evaluation Service, Inc. (ICC-ES): ICC-ES AC38 - Acceptance Criteria for Water-Resistive Barriers.

## 1.5 SUBMITTALS

- A. Submit documentation from an approved independent testing laboratory certifying compliance with, a) the resistance to Hydrostatic Pressure, b) ASTM D 882 - Tensile Properties, c) ASTM E 84 – Class A Surface Burning Characteristics, d) ASTM E 96/E 96M - Test Methods for Water Vapor Transmission of Materials, e) ASTM E 2178 - Standard Test Method For Air Permeance of Building Materials, and f) ASTM E 2357 Standard Test Method for Determining Air Leakage of Air Barrier Assemblies.
- B. Submit documentation from an approved independent testing laboratory certifying the membrane meets ICC-ES AC38 - Acceptance Criteria for Water-Resistive Barriers.
- C. Submit manufacturers' current product data sheets, details and installation instructions for the water-resistive vapor permeable air barrier membrane components and accessories.
- D. Submit samples of the following:
  1. Manufacturer's sample warranty
  2. Water-resistive vapor permeable air barrier sheet, minimum 8 by 10 inches (203 by 254 mm)
  3. Components, minimum 12-inch (305-mm) lengths
  4. Membrane flashings and lap seam tapes
  5. Fasteners, clips, strapping and masonry ties
  6. Sealants

## 1.6 QUALITY ASSURANCE

- A. Single Source: Self-adhered water-resistive vapor permeable air barrier membrane components and accessories must be obtained as a single-source membrane system to ensure total system compatibility and integrity.

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B. Manufacturer Qualifications:

1. Manufacturer of specified products listed in this Section to have minimum 8 years of continued experience in the manufacture and supply of highly vapor permeable water resistive air barrier products successfully installed in similar project applications.
2. Manufacturer of specified products listed in this Section to have experienced in-house technical and field observation personal qualified to provide expert technical support.

C. Fire Performance Characteristics: Provide water-resistive barrier meeting the following fire-test characteristics.

1. Surface-Burning Characteristics: ASTM E 84
2. Flame spread index: 25 or less
3. Smoke developed index: 450 or less

1.7 MOCK-UP

- A. Provide mock-up of specified water-resistive vapor permeable air barrier materials under provisions of Section 01 33 30 - Shop Drawings, Product Data and Samples.
- B. Where directed by architect, construct typical exterior wall panel, 6 foot long by 6 foot wide incorporating the sheathing board or substrate, sill pan protection system, window frame and attachment method, clips, strapping or masonry ties, attachment of insulation and detailing of water-resistive vapor permeable air barrier membrane application and lap seams.
  1. Perform water spray test of mockup to demonstrate performance.
- C. Allow 48 hours for inspection of mock-up by architect before proceeding with water-resistive vapor permeable air barrier work. Mock-up may remain as part of the Work.

1.8 PRE-INSTALLATION CONFERENCE

- A. Contractor shall convene oneweek prior to commencing Work of this section.
- B. Ensure all contractors responsible for creating a continuous plane of water and air tightness are present.

1.9 DELIVERY, STORAGE AND HANDLING

- A. Refer to current Product MSDS for proper storage and handling.

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- B. Deliver materials to the job site in undamaged and original packaging indicating the name of the manufacturer and product.
- C. Store roll materials on end in original packaging. Protect rolls from direct sunlight and inclement weather until ready for use.

#### 1.10 COORDINATION

- A. Ensure continuity of the self-adhered water-resistive vapor permeable air barrier system throughout the scope of this section.

#### 1.11 WARRANTY

- A. Provide manufacturer's standard material warranty in which manufacturer agrees to provide replacement material for the self-adhered water-resistive vapor permeable air barrier sheets installed in accordance with manufacturer's instructions that fails due to material defects within 20 years of the date of Purchase.

## 2. PRODUCTS

### 2.1 MATERIALS

- A. Primary self-adhered water-resistive vapor permeable air barrier membrane components and accessories must be obtained as a single-source to ensure total system compatibility and integrity.

- 1. Basis of Design: Self-Adhered water-resistive vapor permeable air barrier membrane by VaproShield LLC., Gig Harbor, WA, Ph (866) 731-7663, Email: [info@VaproShield.com](mailto:info@VaproShield.com), Website: [www.vaproshield.com](http://www.vaproshield.com).
- 2. Other acceptable manufacturers:
  - a. Henry Blueskin VP
  - b. Grace PermaBarrier VPS

#### B. WATER-RESISTIVE VAPOR PERMEABLE AIR BARRIER MATERIALS

- 1. Primary self-adhered air barrier sheet membrane shall be WrapShield SA<sup>®</sup> Self-Adhered Water-Resistive Vapor Permeable Air Barrier Sheet by VaproShield, a zero VOC self-adhered vapor permeable air barrier sheet membrane consisting of multiple layers of UV stabilized spun-bonded polypropylene having the following properties:
  - a. Color: Custom Husker Red
  - b. Air Leakage: <0.01 cfm/ft. sq. when tested in accordance with ASTM E 2357 and <0.0000263 cfm/sq. ft. @ 75 Pa (0.000134 L/s/m sq @ 75 Pa) when tested in accordance with ASTM E 2178

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- c. Water Vapor Permeance tested to ASTM E 96 Method B: 50 perms (2875ng/Pa.s.m<sup>2</sup>)
- d. Water Resistance tested to AATCC 127, 550 mm hydrostatic head for 5 hours: No leakage
- e. Tensile Strength tested to ASTM D 882: 44.8 lbf/inch (78 N/mm), machine direction; 25 lbf/inch (43.8 N/mm), cross-machine direction
- f. Application Temperature: Ambient temperature must be above 20 degrees F
- g. Surface Burning Characteristics tested to ASTM E 84: Class A, Flame-spread index of less than 10, Smoke-development index of less than 15
- h. Physical Dimensions: 0.026 inches (0.65 mm) thick and 59 inches (1.5 m) wide and 8.26 oz per sq. yd.

#### C. WATER-RESISTIVE VAPOR PERMEABLE TRANSITION AND FLASHING MEMBRANE

1. Self-adhered air barrier transition and flashing membrane shall be VaproFlashing SA™ by VaproShield, a zero VOC self-adhered water-resistive vapor permeable membrane having the following properties:
  - a. VaproFlashing SA™ Orange: 11-1/2 inches or 19 inches wide x 164 feet long
  - b. Air Leakage: < 0.0000263 cfm/sq. ft. @ 75 Pa (0.000134 L/s/m sq @ 75 Pa) when tested in accordance with ASTM E 2178
  - c. Water Vapor Permeance tested to ASTM E 96 Method B: 50 perms (2875ng/Pa.s.m<sup>2</sup>)
  - d. Water Resistance tested to AATCC 127, 550 mm hydrostatic head for 5 hours: No leakage

#### D. WATER-RESISTIVE FLASHING AND PENETRATION TAPES

1. Tapes shall be VaproTape by VaproShield: UV stable, double/single sided, moisture-resistant flexible tape with adhesive backing having the following properties:
  - a. VaproTape (Single-Sided): 20 mil thick by 2 inches (50 mm) wide penetration seam tape
  - b. VaproTape (Double-Sided): 30 mil thick by 1 inch (25 mm) wide penetration seam tape
  - c. VaproTape UV-Resistant Black: 35 mil thick by 4 inches (102 mm) wide penetration seam tape
  - d. VaproAlumaTape: 20 mil thick by 4.5 inches (114 mm) and 9 inches (229 mm) wide, foil faced, UV stable, moisture-resistant flashing and membrane transition tape for use with silicone sealants

#### E. VAPROLIQUI-FLASH™ VAPOR PERMEABLE WATER RESISTIVE FLASHING FOR ROUGH OPENINGS

1. Window and door flashing shall be VaproLiqui-Flash by VaproShield, a liquid-applied vapor permeable air barrier flashing material with vapor permeance and resistance to air leakage properties compatible with the primary air barrier membrane.

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#### F. SILL PAN PROTECTION SYSTEM

1. Sill Pan Protection System: Extruded PVC sections with integral sloped shape, preformed corner dams and window unit spacer supports configured to drain moisture from window unit base to exterior shall be VaproSillSaver™ by VaproShield. Coordinate selection of sill pan depth with window unit frame size. VaproSillSaver system is designed for use with nail flanged equipped windows only.

#### G. WATER-RESISTIVE WEATHER BARRIER BATTEN and VENTILATION ACCESSORIES

1. Water-resistive weather barrier batten and ventilation accessories by VaproShield shall be made of black PVC material
  - a. VaproBatten™: Black vinyl extrusion with pre-formed fastener and moisture drainage channels configured to create a ventilated airspace between wall cladding and weather-resistive barrier. VaproVent™ L Strip and VaproVent™ Hook Strip not necessary in typical open joint cladding systems.

#### 2.2 PENETRATION SEALANT

- A. Provide sealant for penetrations as recommended by manufacturer. Appropriate sealants shall be Dow 758 or VaproLiqui-Flash.

### 3. EXECUTION

#### 3.1 GENERAL

- A. Verify that surfaces and conditions are ready to accept the Work of this section. Notify architect in writing of any discrepancies. Commencement of the Work or any parts thereof shall mean acceptance of the prepared substrates.
- B. All surfaces must be dry, sound, clean and free of oil, grease, dirt, excess mortar or other contaminants detrimental to the adhesion of the water resistive air barrier membrane and flashings. Fill voids and gaps in substrate greater than ¼ inch in width to provide an even surface. Strike masonry joints full-flush.
- C. Minimum application temperature self-adhered membrane and flashings to be above 20 degrees F (minus 6.0 degrees C).
- D. Ensure all preparatory Work is complete prior to applying primary self-adhered vapor permeable air barrier sheet membrane.
- E. Mechanical fasteners used to secure sheathing boards or penetrate sheathing boards shall be set flush with sheathing and fastened into solid backing.

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### 3.2 COORDINATION OF SELF-ADHERED VAPOR PERMEABLE AIR BARRIER MEMBRANE INSTALLATION

- A. Self-adhered vapor permeable air barrier sheets may be installed vertically or horizontally over the outside face of exterior sheathing board or substrate.
- B. Complete detail Work around corners, wall openings, building transitions and penetrations prior to field applications.
- C. Install self-adhered vapor permeable air barrier sheet over the outside face of exterior sheathing board or substrate, measure and pre-cut into manageable sized sheets to suit the application conditions.
- D. Install self-adhered vapor permeable air barrier sheet complete and continuous to substrate in a sequential overlapping weatherboard method starting at bottom or base of wall and working up.
- E. Stagger all end lap seams.
- F. Roll installed membrane with roller to ensure positive contact and adhesion with substrate.

### 3.3 INSIDE AND OUTSIDE CORNERS

- A. Pre-treat inside and outside corners with self-adhered air barrier transition and flashing membrane extending a minimum of 5 inches from inside and outside corners, or overlap field material a minimum of 3 inches in each direction.
- B. Align and position self-adhered air barrier transition and flashing membrane, remove protective film and press firmly into place. Provide minimum 3 inch overlap at all side laps and minimum 3 inch overlap at all end laps of membrane.
- C. Roll membrane and lap seams with roller to ensure positive contact and adhesion.

### 3.4 BUILDING TRANSITION CONDITIONS

- A. Tie-in to structural beams, columns, floor slabs and intermittent floors, parapet curbs, foundation walls, roofing systems and at the interface of dissimilar materials with self-adhering air barrier transition and flashing membrane.
- B. Align and position self-adhered air barrier transition and flashing membrane, remove protective film and press firmly into place. Provide minimum 3 inch lap on to substrates.
- C. Ensure minimum 3 inch overlap at side and end laps of membrane.
- D. Roll membrane and lap seams with roller to ensure positive contact and adhesion.

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### 3.5 WINDOW, DOOR AND OTHER WALL OPENINGS

- A. To avoid waste, predetermine best method and sequence to the install self-adhered air barrier transition and flashing membrane around window or wall openings subject to the opening size and installation of window, door or louver type.
- B. Wrap self-adhered air barrier transition and flashing membrane into wall openings to cover sill, jambs and head. It is not required to install continuous sheets through corners.
- C. Remove release film, align flashing membrane and apply pressure to ensure positive contact. Roll Lap seams to ensure adhesion. Provide lap seams to shed water.
- D. Install preformed corner flashing membrane into corners over flashing membrane. Secure preformed corners into position with flashing tape and seal to self-adhered air barrier.
- E. Subject to window installation requirements, install preformed sill pan system and seal to installed self-adhered air barrier window flashing membrane with sealant.
- F. Install windows in accordance with window manufacturer's details and cover nail flange with flashing tape. Install flashing tape along jamb and across head flanges of window and seal to installed self-adhered air barrier transition membrane. Roll tape to ensure positive contact to substrate. Seal exposed leading edge of tape.
- G. For windows without nail flange, install specified aluminized tape around perimeter of opening to accommodate placement of backer rod and sealant between window frame and self-adhered vapor permeable air barrier membrane.

### 3.6 MECHANICAL EQUIPMENT PENETRATIONS

- A. Mechanical pipe, electrical conduit and/or duct work must be secured solid into position prior to installation of self-adhered vapor permeable air barrier membrane.
- B. Electrical services penetrating the wall assembly and self-adhered vapor permeable air barrier membrane must be placed in appropriate conduit and secured solid into position.
- C. Install manufactured flanged penetration sleeves as recommended by sleeve manufacturer.
- D. For straight sided penetrations, cut and fit self-adhered vapor permeable air barrier to accommodate sleeve, install specified single sided flashing tape to seal the air barrier membrane to ductwork or preformed flange sleeve.
- E. For pipe penetrations, refer to manufacturer's standard details.

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### 3.7 VERTICAL APPLICATIONS

- A. For vertical applications, align sheets with an 'inside' or 'outside' corner to avoid wrinkles and miss-alignment of subsequent applications.
- B. Measure and pre-cut into manageable sized self-adhered sheets to suit the application conditions.
- C. Hang self-adhered sheets over wall and extend down to lowest point of wall. Allow for excess material at bottom of wall to accommodate tie-ins and connections to adjacent surfaces.
- D. Align and position self-adhered membrane, remove release film and press firmly into place. Provide minimum 3 inch overlap at side and end laps of membrane. Roll membrane and lap seams with roller to ensure contact and adhesion.
- E. Continue to remove release film and apply pressure to ensure positive contact onto wall substrate.
- F. Install subsequent sheets of self-adhered vapor permeable air barrier sheets in overlapping weatherboard format. Ensure sheets lay smooth and flat to surfaces. Roll membrane and lap seams with roller to ensure contact and adhesion.

### 3.8 HORIZONTAL APPLICATIONS

- A. For horizontal applications, align sheets and begin installation of water-resistive weather barrier at bottom or lowest point of wall.
- B. To avoid wrinkles and miss-alignment of subsequent applications it is recommended to pre-mark or "Snap" a level line to work from. Measure and pre-cut into manageable sized sheets to suit the application conditions.
- C. Allow for excess material at bottom of wall to accommodate tie-ins and connections to adjacent surfaces.
- D. Align and position self-adhered membrane, remove release film and press firmly into place. Provide minimum 3 inch overlap at all side and end laps of membrane. Roll membrane and lap seams with roller to ensure contact and adhesion.
- E. Continue to remove release film and apply pressure to ensure positive contact onto wall substrate.
- F. Install subsequent sheets of self-adhered vapor permeable air barrier sheets in overlapping weatherboard format. Ensure sheets lay smooth and flat to surfaces. Roll membrane and lap seams with roller to ensure contact and adhesion.

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### 3.9 BATTENS AND VENTILATION STRIPS FOR RAIN SCREEN CLADDING SYSTEMS

- A. Provide and install specified battens and ventilation strips under cladding systems.
- B. Install horizontal starter strip or vent strip at base of wall, vertical battens and top vent strip, secure into solid backing ready for installation of cladding system.
- C. Coordinate spacing of battens and vent strips to accommodate cladding system.

### 3.10 FASTENING CLIPS AND MASONRY TIES

- A. Install clips and masonry ties over primary self-adhered vapor permeable air barrier membrane.
- B. Secure clips and masonry ties with corrosion-resistant, or stainless steel screws with gasketed fasteners.
- C. Consult VaproShield Technical Services for recommendations on appropriate masonry tie types and methods to seal penetrations.

### 3.11 FIELD QUALITY CONTROL

- A. Make notification when sections of work are complete to allow review prior to covering self-adhered water-resistive vapor permeable air barrier system.
- B. Owner to engage independent consultant to observe substrate and membrane installation prior to placement of cladding systems and provide written documentation of observations.

### 3.12 PROTECTION

- A. Protect wall areas covered with self-adhered water-resistive vapor permeable air barrier from damage due to construction activities, high wind conditions, and extended exposure to inclement weather.
- B. Review condition of self-adhered water-resistive vapor permeable air barrier prior to installation of cladding. Repair, or remove and replace damaged sections with new membrane.
- C. Recommend to cap and protect exposed back-up walls against wet weather conditions during and after application of membrane, including wall openings and construction activity above completed self-adhered water-resistive vapor permeable air barrier installations.
- D. Remove and replace water-resistive weather barrier membrane affected by chemical spills or surfactants.

END OF SECTION 072727